CLAIMS

What is claimed is:

1. A tool for use with a rocket slidably received in a tube of a launcher,

the tube having opposite and generally open ends, and having a fixed stop projection extending into the tube at one end of the tube;

the rocket

having an end annular surface circumscribing a nozzle, and

being engageable with the stop by sliding the rocket toward said one end and into an initial position where said annular surface engages the stop;

the launcher including

a member pivoted to the tube oppositely of the projection for movement between a first position aligned with the tube and a second position across the tube, and

at least one element which disengages the rocket when said member is pivoted to the first position, and which engages the rocket when said member is pivoted to the second position and the rocket is disposed in a loaded position where the rocket is spaced from the stop in a direction away from said one end; and

the tool comprising

a head

configured for reception in the tube,
conforming slidably and peripherally to the tube,
bearing a face conforming to said annular surface,
defining a recess configured to receive said member when said face engages said annular surface, said member is in the second position, and the rocket is in the loaded position, and
bearing a clearance surface spaced transversely of the tube from the stop projection when the head is received in the tube; and

a handle,

whereby, when said member is in the second position, the head is insertable into the tube without engaging said member or the stop projection for urging the rocket into said loaded position from said initial position by engagement of said face with said annular surface without the tool slipping from said annular surface and damaging the rocket.

2. The tool of claim 1 for use with a tube having a cylindrical interior:

wherein said member, when in said second position,
extends diametrically of the tube and partially across the tube a first predetermined distance toward said stop projection, and
is disposed a predetermined second distance axially of the tube from said annular surface when the rocket is in said loaded position; and

wherein the tool further comprises

the head having a peripheral surface conforming cylindrically to the tube interior,

said recess
extending axially of the peripheral surface into the head a distance greater than said first predetermined distance, and
extending radially of the peripheral surface into the head a distance greater than said second predetermined distance, and
said clearance surface being planar and extending axially parallel to the peripheral surface.

3. The tool of claim 2 wherein said face conforming to said annular surface is a circular segment bounded by said clearance surface, and wherein the tool further comprises said recess extending axially into the head from said face, and extending diametrically into the head oppositely of said clearance surface.

4. The tool of claim 1 wherein the rocket is electrically ignited, and wherein the tool further comprises the head being constructed of a material selected to dissipate static electricity.

5. A tool head comprising:
an arcuate peripheral surface conforming to a segment of a cylinder having a predetermined axis;
a planar peripheral surface subtending the arcuate peripheral surface, said planar peripheral surface extending parallel to said axis and being disposed oppositely of said axis from the arcuate center of the arcuate peripheral surface;
an axial end face terminating the arcuate peripheral

surface and the planar peripheral surface, the axial end face including at least one planar face surface extending normal to said axis; and

a rectangular recess defined by the head and extending into the head in a direction along said axis from the axial end face, and in a direction perpendicular to said axis from the arcuate peripheral surface.

6. The tool head of claim 5 further comprising means disposed at an axial end of the tool head oppositely of said end face for attaching a handle to the tool head.

7. The tool head of claim 5 wherein the axial end face comprises:

an arcuate outer planar face surface extending radially inward from the arcuate peripheral surface; and

a central planar face surface disposed radially within the arcuate outer planar face surface and recessed inwardly of the tool head in a direction along said axis from the arcuate outer planar face surface.

8. The tool head of claim 7 further comprising means for releasably attaching a handle to the tool head, said means being disposed at an axial end of the tool head axially opposite of said end face.

9. The tool head of claim 5 further comprising the tool head being of unitary construction.

10. The tool head of claim 5 wherein the tool further comprises the head being unitarily constructed of a material

selected to dissipate static electricity.

11. A method of loading and unloading a rocket,
the rocket
having an nozzle with damageable elements,
having an annular surface around the nozzle, and
being being loaded into and unloaded from a firs t
end of a launching tube;
the launching tube having a second end provided with
a stop extending into the tube,
a blast paddle pivoted for movement between a
longitudinal position extended from said
second end and a transverse position
partially across said second end, and
a detent engaging the rocket when the blast paddle
is in the transverse position and the rocket
is in a loaded position spaced from the stop
toward said one end,
the method comprising:
disposing the rocket in the launching tube;
disposing the blast paddle in the extended position;
providing a rocket tool including
a head having
a cylindrically segmental surface conforming
interiorly to the tube,
an end face conforming to said annular
surface,
an end recess conforming to the nozzle,
a recess conforming to the blast paddle when
the blast paddle is in the transverse
position, and
a side surface configured to avoid the stop
when the cylindrically segmental surface

is within the launching tube, and

a handle extending from the head oppositely of said end face;

inserting the head into said second end with the cylindrically segmental surface guided by the tube so that said side surface passes the stop and so that said end face engages said annular surface without slipping from said annular surface and affecting said damageable elements;

urging the tool and rocket toward said first end until the rocket is in a desired position; and

withdrawing the head from the tube through said second end so that the rocket remains in said desired position with said damageable elements undamaged.

12. The method of claim 11 wherein the rocket is electrically ignited and the method further comprises constructing said head of a material selected to dissipate static electricity.

13. A method of loading a rocket in accordance with claim 11, the method of loading comprising:

inserting the rocket into the launching tube from the first end with the blast paddle in the extended position until said annular surface engages the stop;

pivoting the blast paddle toward the transverse position;

inserting the head into said second end with the cylindrically segmental surface guided by the tube and with said recess receiving the blast paddle so that the head passes the blast paddle in the transverse position, said side surface passes the stop, and said end face engages said annular

surface;

urging the tool and rocket toward said first end until the rocket is in the loaded position with the blast paddle in the transverse position and the detent engaging the rocket; and

withdrawing the head from the tube through said second end so that the rocket remains in the loaded position engaged by the detent and with said damageable elements undamaged.

14. A method of unloading a rocket in accordance with claim 11 wherein the rocket is initially in the loaded position with the blast paddle in the transverse position and the detent engaging the rocket, the method of unloading comprising:

pivoting the blast paddle toward the extended position;

inserting the head into said second end with the cylindrically segmental surface guided by the tube so that the head passes the blast paddle in the extended position, said side surface passes the stop, and said end face engages said annular surface;

urging the tool and rocket toward said first end until the rocket is in a position extending from said first end;

withdrawing the head from the tube through said second end so that the rocket remains in said position extending from said first end and with said damageable elements undamaged.